Recommendations for the Next Farm Bill

Testimony presented to the

United States House Committee on Agriculture

By

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Vice President - Legislation

National Grain Sorghum Producers

April 4, 2001

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Introduction

Mr. Chairman, members of the Committee, on behalf of grain sorghum producers nationwide, I would like to thank the U.S. House Committee on Agriculture for allowing us this opportunity to discuss our proposals for changes to federal farm policy.

My name is Bill Kubecka, and I serve as vice president for legislation for the National Grain Sorghum Producers (NGSP). I farm in a family partnership near Palacios between Houston and Corpus Christi, Texas. Our diversified operation includes grain sorghum, rice, and cotton.

NGSP represents U.S. grain sorghum producers nationwide. Headquartered in the heart of the U.S. grain sorghum belt at Lubbock, Texas, our organization works to increase the profitability of grain sorghum production through market development, research, education, and legislative representation. The recommendations we are making to you today have been reviewed and approved by NGSP's 27-member board.

Our recommendations to you today are focused on the specific needs of grain sorghum producers, and we appreciate your consideration of them as you undertake the task of amending commodity titles in federal farm legislation. However, until such titles are amended, we urge additional, short-term, emergency assistance for producers that are continuing to endure a marketing, energy and credit crisis; and, we thank the committee for requesting that the House Budget Committee consider additional assistance for farmers this crop year.

Analyses of the recommendations made in this testimony were conducted by NGSP with input from the staff at the Food and Agriculture Policy Research Institute (FAPRI) using their Congressional Budget Office (CBO) model and by AgriLogic, Inc., of College Station, Texas, using their private model which utilizes the CBO baseline information in their model. This is not the actual CBO baseline but is instead an approximate of the CBO baseline. These organizations currently are working on more complete analyses of our recommendations, and they should be available by late April. The FAPRI analysis is in response to a request to evaluate the impact of sorghum loan rates on production as requested by Chairman Combest and Ranking Member Stenholm of this Committee.

Current Industry Overview

The United States grain sorghum industry is comprised primarily of nine states in the Great Plains. The states of Kansas, Texas, Nebraska and Oklahoma account for 85 percent of annual production. Over the last ten years grain sorghum acreage has averaged 9.43 million harvested acres and production has averaged 621.57 million bushels. However, in 2000 the industry only produced 470 million bushels on 7.72 million harvested acres. Additionally, the forage sorghum industry utilized as silage, hay and direct grazing represents another five million acres of production.

The United States grain sorghum industry services the animal feeding sector of the southern and western United States and Mexico, with poultry, beef and swine industries being major users. However, there are significant new growth markets within the grain sorghum industry, which are leading to increased demand. The ethanol industry in Nebraska, Kansas and New Mexico has increased usage to a projected 15 percent of production for the 2000-2001 market year. With no less than 8 proposed ethanol plants under various stages of development in the sorghum belt, this industry holds tremendous promise to become the single largest user of grain sorghum in the United States if they can be assured a reliable supply of grain. Additionally, new genetics are allowing new markets in the food industry in the U.S. These markets hold real promise as health benefits of sorghum become better defined. Worldwide, approximately 50 percent of grain sorghum is consumed directly as a food grain leaving a tremendous growth opportunity here in the U.S. where only two percent of the U.S. production goes directly into human consumption.

Additionally, the U.S. dominates world seed production in sorghum with a billion dollar seed industry focused on 250,000 acres primarily in the Texas Panhandle.

The United States sorghum industry enjoys dominance in the world sorghum trade with an average world market share of 78 percent. However, as a portion of world feed grain supplies we remain a small player at 4.69 percent of the market. This international presence comes from the 30 to 40 percent of U.S. grain sorghum that is exported annually to primarily Mexico, Japan and Spain.

NGSP Farm Policy Background

NGSP was among the members of the agriculture industry urging farm flexibility in 1996, and we stand by that concept today. We urge the Committee to find a solution within the framework of the 1996 FAIR Act with a few modifications, and we would like to thank Congress

for giving us the framework in 1996 to make planting decisions based on market conditions and the conservation needs of our individual operations. We should not go back to a supply management program. U.S. supply management policies would allow foreign countries to bring environmentally sensitive land into production, increasing world commodity supplies and stealing U.S. market share around the world.

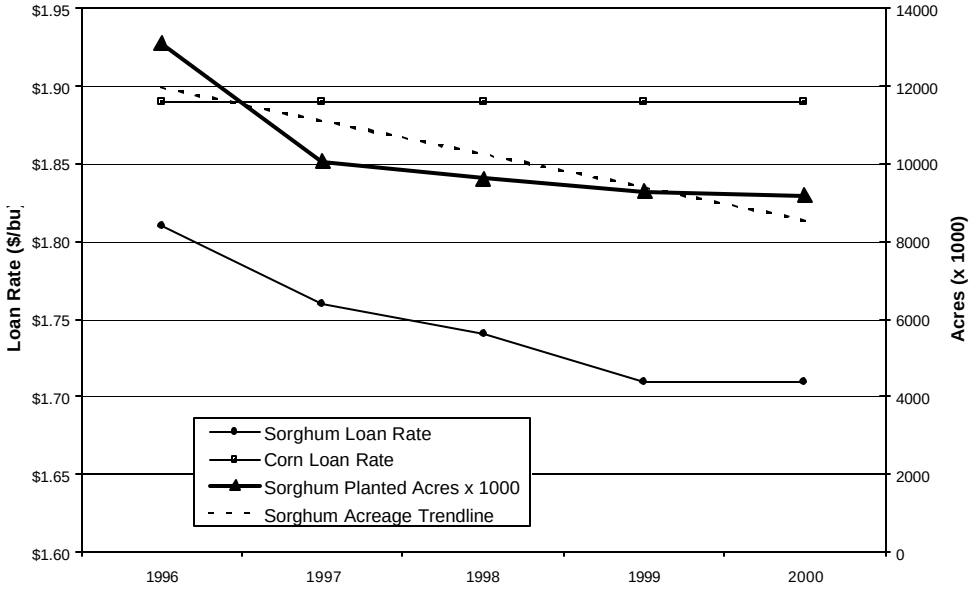
However, when the 1996 Farm Bill became law, commitments were made to the agricultural community to work on creating an environment in which Freedom to Farm could thrive by opening foreign markets, easing the tax and regulatory burden and providing new risk management tools for farmers. Despite the best efforts of Congress, these promises were not delivered upon, and Freedom to Farm did not operate in an optimum environment. That is why, in addition to our recommendations, we urge your support of measures similar to those in The Rural America Prosperity Act introduced recently in the House by Rep. John Boehner (R-OH), with a companion bill in the Senate introduced by Senate Agriculture Committee Chairman Dick Lugar (R-IN) and Sen. Pat Roberts (R-KS).

Our recommendations center on correcting inequities that would genuinely give producers the freedom to farm any crop that suits their marketing plans and conservation needs, rather than planting those that are most appealing from a farm policy standpoint. The sorghum industry believes that crop insurance subsidies on higher risk crops and loan rates are greatly driving cropping systems and cropping decisions.

In 1985, farm legislation lowered target prices for grain sorghum compared to other crops, which encouraged farmers to replace sorghum with other crops. Additionally, the loan rate for grain sorghum from 1972 to 1996 was never more than five percent below the loan rate for corn[1], until only recently when the loan rate for grain sorghum began dropping precipitously while the loan rate for other commodities remained steady, culminating in a sorghum loan rate today which is ten percent below, or double the lowest levels of the last 30 years, of the corn loan rate. It was through the assistance of some of you on this Committee that an additional three-cent cut to the loan rate for 2001 (even as loan rates for all other crops were unchanged) was prevented.

[1] USDA-Office of the Secretary (1996)

1996-2000: Sorghum/Corn CCC Loan Rate Relationship and Planted Sorghum Acres



Perhaps it is not merely a coincidence that we come before you today having just harvested the lowest number of grain sorghum acres on record since 1953[2]. For this reason, the equalization of the grain sorghum loan rate with the corn loan rate is the centerpiece of our testimony to you today. It is our strongest belief that should the Committee choose to follow any of our other Farm Bill recommendations that are detailed here, such decisions can have little or no positive impact on our industry if we fail to achieve at least an equal loan rate to corn, thereby increasing options for producers and avoiding further grain sorghum acreage losses in times of high energy costs and depressed markets such as today.

Policy Recommendations: Loan Rates

In order to rebalance loan rates and prevent further distortion to acreage and world markets, NGSP recommends that the loan rate for grain sorghum be equalized with the corn loan rate, that loan rates for oilseeds be kept at current levels, that loan rates for all other commodities be increased by five percent. Additionally, NGSP recommends that this equalization of loan rates for sorghum and corn be extended to sorghum silage.

[2] USDA-National Agricultural Statistics Service (2000)

Commodity	Current Loan Rate	Proposed Loan Rate
Corn	$1.89/bu	$1.98/bu
Sorghum	$1.71/bu	$1.98/bu
Rice	$6.51/cwt	$6.84/cwt
Cotton	$0.52/lb	$0.55/lb
Wheat	$2.58/bu	$2.71/bu
Barley	$1.65/bu	$1.73/bu
Oats	$1.21/bu	$1.27
Oilseeds	No Change	

The 1996 law states under Title I, of the Agricultural Market Transition Act, Section 132, Loan Rates and Marketing Assistance Loans, (b) Feed Grains (3) Other Feed Grains: *The loan rate for a marketing assistance loan under section 131 for grain sorghum, barley, and oats respectively, shall be established at such level as the Secretary determines is fair and reasonable in relation to the rate that loans are made available for corn, taking into consideration the feeding value of the commodity in relation to corn.*

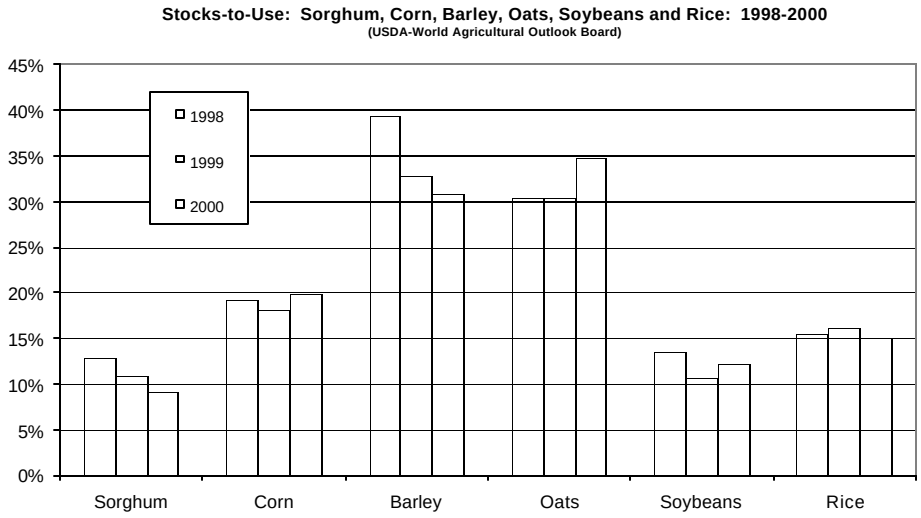
Based on this language from the 1996 law that gives considerable discretionary authority, loan rates could be determined in any number of ways, using various factors. Given the potential for arbitrary interpretation of the law, we respectfully ask that the Committee consider changing the law to set the statutory minimums for corn and sorghum loan rates equal. Following are several factors to which NGSP would like to point as verification for equal loan rates.

These factors include demand opportunities as supported by stocks-to-use, relative loan rates based on weights of other commodities, cash markets, nutritional and end-use value, and conservation considerations. Research conducted by FAPRI and included in the March 15, 2001, National Association of Wheat Growers (NAWG) testimony indicates that under their recommendation, equalizing the sorghum loan rate with corn will cost only an average of $28 million annually and will increase production by five percent while decreasing farm prices by only 1.5 percent. Additionally, it would create a 22 percent per acre increase in net returns to sorghum producers.

Projected average cost over eight years for increasing other loan rates by five percent (with the exception of oilseeds) and equalizing the loan rates for corn and sorghum would be $575 million, a high of $1.1 billion in 2002 and no net cost in 2005 resulting from ending acreage distortions between other commodities and oilseeds.

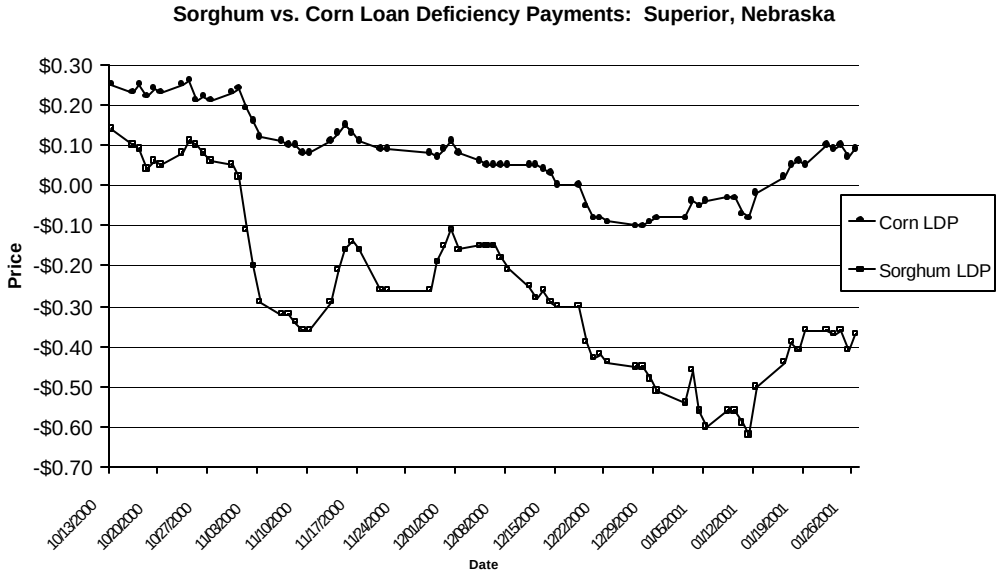
Demand Opportunities:

An analysis of recent ending stocks and total use indicates any additional sorghum acreage generated by an equal loan rate with corn would generally be non-distortive to grain sorghum supplies. Indeed, from a critical mass and logistical standpoint, increased production would allow us to compete in several premium markets in which we are unable to compete today because of a lack of a reliable supply.



Additionally, our market research documents that our chief complaint from end users is that there is not a reliable supply of grain sorghum. We have lost demand because we cannot ensure production, and existing demand (in the animal feeding industries) has eroded for this reason. Additionally, the sorghum industry has not been in a position to fill demand from replacement markets without a reliable supply.

This inequity in the loan rate also has caused distortions in the marketplace when considering Loan Deficiency Payments (LDP). Last season, cash prices for corn and grain sorghum were very close, but loan rate discrepancies resulted in corn receiving a 20 to 30 cent LDP per bushel while grain sorghum was only getting a two or four cent LDP per bushel if any at all. This inequity means $20 to $30 per acre for farmers that are already in a tight cash revenue situation.



Relative Weight and Loan Rates:

Other feed grains that fall under Title I of the Agricultural Market Transition Act, Section 132, in determining loan rates are oats and barley. While the 2001 loan rate for barley is $1.68 per bushel, pound for pound, the loan rate for barley is higher than the loan rate for sorghum and corn because barley weighs only 48 pounds per bushel, compared to 56 pounds per bushel for corn and grain sorghum. Similarly, the loan rate for oats is higher than the loan rate for sorghum and corn, because oats are measured at 32 pounds per bushel. Quoted on a hundredweight basis, 2001 loan rates for corn, sorghum, barley and oats are as follows[3]:

Corn	$3.38
Sorghum	3.05
Barley	3.44
Oats	3.78

NGSP has been told that this is due to cash market comparisons of oats, barley and sorghum to corn. However, we are awaiting information from USDA as directed in an appeal of our December 20 Freedom of Information Act request for further analysis of factors determining the above loan rates for these feed grains. On a pound-for-pound basis, sorghum should be equal with all feedgrains.

Cash Markets:

Recent cuts to the sorghum loan rate despite an already historically wide gap between the loan rate for sorghum and the loan rate for corn came at a time when many Nebraska grain sorghum producers were reporting cash sorghum sales as high as ten cents per bushel over corn

[3] USDA-Farm Service Agency (2000)

even as the government loan rate for corn was much higher than sorghum. Nationally in the past year, farmers realized grain sorghum cash prices that were two to three percent above or below corn in most sorghum growing areas, while the loan rate for corn was ten percent more than sorghum.

As sorghum acres decline and end-users consolidate and grow, NGSP believes daily cash market reports are increasingly less precise. Therefore, NGSP believes a level loan rate policy is needed to avoid continual problems in this area. Certainly by now, NGSP would like to have examined and addressed how feed grain loan rates were calculated by USDA even in the face of such cash market conditions. NGSP filed an Open Records request with USDA on December 20 in an attempt to thoroughly analyze discrepancies in USDA formulas based on cash market-based calculations and recommend solutions based on such an analysis. However, NGSP regrets that we are not able to present such an analysis in this testimony because this Open Records request was recently denied by USDA and is currently under appeal.

Nutritional and End-Use Value:

University research trials conducted over the last ten years have clearly shown that the end-use value of sorghum is equal to other feedgrains (corn) when properly processed:

1. of dairy cattle fed either corn or sorghum in a control group, those fed sorghum showed an increase in the milk protein and milk production over those on a corn ration (see Appendix A)
2. sorghum is comparable to corn in ethanol production, and the dollar value of sorghum dried distillers grain (DDG) is comparable to corn DDG when end-uses are similar with sorghum (see Appendix B)
3. a greater reduction in nitrogen-corrected metabolizable energy occurred in corn than in sorghum when the grains were fermented to distillers dried grains (DDGS) with solubles made from those grains, and metabolizable energy values were 24 percent greater for DDGS from sorghum than from corn (see Appendix C)
4. sorghum was equal to corn in feeding value in broiler chicks fed complex diets in crumbilized form (see Appendix D)
5. hard and soft endosperm sorghum milled at the same rate as corn was comparative in nutritional value (see Appendix E)
6. steam-flaked sorghum can be used instead of steam-flaked corn when fed without additional fat in high concentrate diets for growing/finishing steers without suffering any adverse effect on gain, feed efficiency or quality grade (see Appendix F).

Conservation Considerations:

Sorghum has been called a "water-sipping" rather than "water-guzzling" crop. University studies have compared water savings through alternative cropping patterns and the use of crops that require less water, such as grain sorghum. Dr. Terry Howell from USDA-ARS facility in Bushland, Texas, found the following in a recent study:

Seasonal Water Use	
Corn	30.3 inches
Sorghum	22.7 inches

Similarly, a Panhandle Water Planning Group Regional Water Plan prepared as a requirement as dictated in 1999 Texas water legislation (Senate Bill 1) has found that the total 50-year water savings for six counties in the Texas Panhandle would amount to 3.5 million acre feet of water if producers converted from irrigated corn to irrigated grain sorghum.

Taking this to a wider scope, water savings from irrigated corn acreage converted to grain sorghum could be astounding when looking at total irrigated corn plantings in Kansas, Nebraska and Texas combined.

Irrigated Corn Acres [4]Planted: 1999	
Kansas	1,670,000
Nebraska	4,952,000
Texas	997,000
Total	**7,619,000**

From a conservation standpoint, the question is simple: How can a limited resource be most efficiently used? We believe that future water supplies should be a priority, and an equal loan rate would help producers be able to afford to conserve water.

Policy Recommendations: Counter Cyclical Safety Net

NGSP is aware that ad hoc disaster and assistance legislation will become increasingly difficult to achieve and defend in the face of projected Social Security, Medicare, and Medicaid needs in the next six to eight years. Such indicators point to the need for a counter cyclical safety net. However, we are very concerned that a counter-cyclical safety net take into account county and regional production and marketing anomalies that might not trigger payments or

[4] USDA-National Agricultural Statistics Service (2000)

impact national supplies. Additionally, NGSP recommends that any counter cyclical payments be constructed on a commodity-by-commodity basis.

Based upon these concerns, NGSP currently is studying a county or regionally oriented counter cyclical program in lieu of a nationally oriented program. However, the "devil is in the details" from a cost standpoint, and the models that we have had access to at this time only score the national costs of our current proposed program at an average cost of $3.95 billion, based upon Agrilogic's CBO model. Costs based on Agrilogic's CBO model range from a low of $1.4 billion in 2008 to a high of $6.7 billion in 2002.

Counter Cyclical Payments in $Million

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Corn	0.0	0.0	2896.6	2718.1	2042.7	887.0	0.0	0.0	0.0
Grain sorghum	0.0	0.0	116.8	118.1	119.3	95.9	22.3	0.0	0.0
Barley	0.0	0.0	69.1	62.1	38.1	0.0	0.0	0.0	0.0
Oats	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wheat	0.0	0.0	1827.3	1843.3	1859.3	1628.5	1242.9	837.3	459.1
Soybeans	0.0	0.0	867.7	624.2	505.8	329.1	0.0	0.0	0.0
Upland cotton	0.0	0.0	462.2	358.4	403.2	383.3	402.6	436.4	483.1
Rice	0.0	0.0	495.3	496.7	498.1	499.5	500.9	502.4	503.8
Total:	0.0	0.0	6735.0	6220.9	5466.6	3823.2	2168.7	1776.0	1446.0

Average Cost of Program from 2002-2008	**3948.0**

Based upon above projected scoring, costs for any county or regionally oriented plan that might be endorsed at a future date would not exceed the costs of the nationally oriented counter cyclical plan that NGSP has scored for this testimony. If such costs were to exceed the costs of our current proposed plan, NGSP would recommend factoring down payments to stay within the budget of our current proposed plan.

NGSP envisions payments from such a program not as Agricultural Marketing Transition Act (AMTA) payments. Rather, these would be market-loss payments, and the crop should be planted and produced to qualify for the counter cyclical program. We are aware that using actual planted acres will be considered an Amber Box payment under World Trade Organization (WTO) requirements, but our analysis projects that such a plan would still fall within the boundaries of WTO spending regulations.

NGSP proposes basing a counter cyclical program on actual market receipts plus market loss payments averaged over the 1996-2000 base period divided by average production units over the 1996-2000 base period. This establishes the **Base Price** for the 2002-2008 period. *(Example: The above calculation for sorghum resulted in a $2.14 Base Price per bushel).* To calculate the counter cyclical payment, the **Current Price** per bushel must be established. This price would be the higher of the marketing loan or the current year's price as defined by total current year marketing receipts divided by current year production. The **Current Price** ($/unit) is then subtracted from the **Base Price**. This provides a **Per Unit Payment** for each commodity. At the end of the growing year when actual production and price has been reported, each producer is then paid this **Per Unit Payment** for each unit produced on their farm in the current year.

(Example: For sorghum, $2.14 Base Price - $1.96 Current Price (2002 Market Price) = $0.18 per bushel counter cyclical payment on the number of bushels the farmer produces in 2002).

Policy Recommendations: Loan Deficiency Payments

NGSP supports the present LDP program, but there must be a re-alignment of loan rates between crops and adjacent counties as previously discussed in this testimony. NGSP believes in the sprit of the law that affords payments to those who sell or agree to sell their production without taking out a non-recourse loan on that production. This action avoids the accumulation of commodities by USDA.

The LDP program is a production program, and the producer must account for production. Upon harvest of the commodity and/or the sale of the commodity (loss of beneficial interest), a producer should be eligible for a LDP on that production. Present law states that the producer must have full possession (beneficial interest) in the commodity at the time he/she applies for an LDP payment. NGSP recommends that beneficial interest rules be changed to allow those who have lost beneficial interest to apply and receive an LDP, at the rate that was calculated on the day the producer lost beneficial interest in that production.

Policy Recommendations: AMTA Payments

We support a continuation of AMTA payments, although we recognize the negative impacts on cash rents in the northern sorghum belt. NGSP believes that the Production Flexibility Contract (PFC) should be extended though the next Farm Bill period, and annual payments should be frozen at the 1999 level (1999 level is approximately the average payment over the seven-year period). For all the reasons put forth in the letter dated March 15 from this

Committee to the House Budget Committee, it is imperative that farmers continue to have a guaranteed payment to help counter the issues and fixed costs that you discussed in your letter.

Providing these payments at these 1999 AMTA levels would require $5.8 billion in annual budget authority, or $1.8 billion annually more than the current baseline projection.

The (PFC) mandates that participants (farmers) carry out and maintain certain conservation practices that are set forth in an individual farm plan that is developed by the Natural Resources Conservation Service (NRCS). This mandate, along with increased regulatory rules from the Environmental Protection Agency, adds to the farmer's fixed cost of production.

NGSP believes that the AMTA payment should be calculated using the historical crop base acres and yields that established the 1996 Farm Bill payments, and that AMTA payments include historical program crops. NGSP recommends that existing historic bases for current program crops should remain in place throughout the next Farm Bill.

NGSP recommends that the next Farm Bill mandate that participating farmers annually certify their planted and non-planted PFC acres with the Farm Service Agency (FSA). Under the 1996 Farm Bill, mandatory annual certification of planted acres was removed. We believe all crops that are eligible for a federal payment (including price support & loans) should be required to certify planted acres.

Policy Recommendations: Other

On a percentage basis, the Conservation Reserve Program has taken more acres from our commodity than any other commodities. For this reason, NGSP supports any increases in CRP-enrolled acres only within the current 36.4 million-acre cap.

CRP contracts that were entered into prior to the 1996 Farm Bill retained crop base history and, upon expiration, producers on that land were eligible to enter into a PFC contract. USDA published regulations for the 1996 legislation that eliminated all the crop base history on CRP contracts signed after August 1, 1996. Under present law, if the PFC program is extended, those acres coming out of CRP will be ineligible for all farm program crop benefits. NGSP recommends that this problem on CRP acres be addressed now, before the next Farm Bill. These CRP contracts should be given the same eligibility status as those CRP contracts that were accepted by USDA prior to August 1, 1996.

NGSP recommends that the next Farm Bill pursue the possibility of providing "green payments" to farmers actively engaged in conservation practices only if funds are made available above and beyond that which is needed to secure the farm safety net and to improve other existing programs.

NGSP as an organization is somewhat split on the issue of eliminating payment limits, in part due to our members' geographic diversity. Some believe having no limits encourages outside ownership of farmland. Others believe that administering the program costs more than removing all limits. NGSP reached a compromise and adopted a policy recommending that Congress retain payment limits on AMTA at $40,000, and double the limits on price support (market loans & LDP) payments to $150,000 with a yearly growth in all limits equal to the annual inflation index.

NGSP opposes any effort to use means testing to target benefits of farm programs to any class or size of farming operation.

Producers of commodities not traditionally covered by base farm support programs have sought guaranteed assistance as well. NGSP opposes these efforts.

Impacts

Allied Industries

NGSP has provided a preliminary analysis of our proposal's impact on the livestock industry (see Appendix I). This analysis suggests there would be no negative impact on the livestock industry.

World Trade Organization

Designing a proposal that falls within WTO guidelines is a stipulation of the NGSP proposal. NGSP believes that our proposal meets all such requirements.

WTO Scoring ($Million)	2002	2003	2004	2005	2006	2007	2008
LDP Program	$4,140.00	$3,558.10	$2,651.20	$1,538.20	$835.60	$647.10	$661.90
Counter Cyclical Payments	$6,735.00	$6,220.90	$5,466.60	$3,823.20	$2,168.70	$1,776.00	$1,446.00
Dairy, Sugar and Peanuts	$6,200.00	$6,200.00	$6,200.00	$6,200.00	$6,200.00	$6,200.00	$6,200.00
Amber Box	$17,075.00	$15,979.00	$14,317.80	$11,561.40	$9,204.30	$8,623.10	$8,307.90
Green Box	$8,776.00	$8,497.00	$8,590.00	$8,634.00	$8,683.00	$8,787.00	$8,849.00

Budget Impact

In order to provide information comparable to the December 2000 baseline analysis prepared by the Congressional Budget Office (CBO), NGSP worked with AgriLogic to conform the assumptions in its macroeconomic model to reflect those used by CBO.

Direct payments to producers using CBO and AgriLogic assumptions under NGSP's recommended policies are detailed in Appendix H.

Impact on Producer Flexibility

Sorghum is a low water-use, low-input choice for many producers, and conservation needs such as these and not federal policy should be prioritized in determining where and when it is planted. Many producers feel it is undesirable to use non-renewable resources to grow other crops simply because they are forced to do so in a depressed farm economy combined with government policy that appears to make other crops the "safe" choice from a cash assurance standpoint. Higher loan rates for crops other than sorghum encourage farmers to grow higher risk crops, potentially costing USDA more in terms of insurance losses in dry years when sorghum would otherwise be a natural fit for producers in semi-arid regions of the Great Plains.

Global Implications

A global population that benefited in the latter part of the 20th Century from the Green Revolution led by Dr. Norman Borlaug is today facing a future predicted to have 25 percent of the world population experiencing severe water scarcity by 2025[5]. However, 50 percent of the increase in demand for water by 2025 can be met by increasing the effectiveness of irrigation and by growing more water-use efficient crops[6]. Further, as water availability in the U.S. Great Plains, dependent on the Ogallala formation, decreases, sorghum's characteristics of heterosis (the ability to become dormant during moisture stress) will allow more yield stability with less risk. A second Green Revolution; rather, a Blue Revolution, less dependent on irrigation seems imperative. New thinking suggests a combined approach of water harvesting and appropriate crops such as the more risk-tolerant sorghum to produce "more crop per drop," has a place in U.S. agriculture.

From a long-term global demand standpoint, total meat consumption in developing countries is projected to more than double by the year 2020; and, worldwide, demand for meat is

[5] International Water Research Institute
[6] International Water Research Institute

projected to increase more than 60 percent of current consumption by 2020[7]. To meet these projections, net grain imports by developing countries will almost double by 2020. Sorghum is uniquely suited to help satisfy the doubling of meat (protein) demand in the world by 2020, as well as serve as a food source for the world.

CLOSING REMARKS

Mr. Chairman, we would like to thank you and the members of this Committee for the opportunity to present our ideas before you today. We look forward to providing you with additional information as we continue working together on this process.

[7] International Population Research Institute

APPENDIX A

SUMMARY OF 6 STUDIES: RESEARCH SHOWS STEAM-FLAKED SORGHUM BOOSTS DAIRY PROFITS

Dr. J.T. Huber, University of Arizona

Results from recent dairy research shows that dairymen can increase their profits as much as 65 cents per day per cow by switching from corn to steam-flaked grain sorghum. Six lactation trials involving 215 cows in early to mid lactation were recently conducted at the University of Arizona Dairy Cattle Center. The research showed the following results:

When fed at 30 to 45% of the diet dry matter, steam-flaked sorghum (SFS – 28lb. bu) out-performed steam-rolled corn (SRC) and dry-rolled sorghum (DRS) for milk and milk protein yields, as well as efficiency of feed utilization. A very flat sorghum flake (21 lb/bu) fed at 40% decreased intake and performance, but increased milk production when fed at 15% of the diet.

Summarization of data from six studies showed that steam-flaking of sorghum grain (27 to 31 lb/bu) increased milk production an average of 10% milk fat yield 4%, milk protein yield 16% and feed efficiency 7%, compared to dry-rolled sorghum. The improved performance with steam-flaked grains appeared related to ruminant and total starch digestion.

Table 1. Effect of flaking sorghum on dairy cow performance.

	Sorghum Comparisons		Change	Sorghum vs. Corn[2]		
Item	DRS	SFS	%	SRC	DRS	SFS
Number of cows	69	67		15	15	15
Ruminal starch dig. %3	54	78	44	70	60	81
Total starch dig, %	76	95	25	87	78	95
Dry matter intake (lb/day)	53.6	53.8	0	54.9	55.8	55.6
Milk, lb/day	68.8	75.9	10	68.8	66.6	72.8
3.5% FCM, lb/day	66.8	71.0	6	67.0	65.7	70.1
FCM/DMI	1.30	1.39	7	1.26	1.20	1.30
Milk fat, %	3.35	3.19	-5	3.34	3.42	3.40
Milk fat, lb. day	2.29	2.39	4	2.29	2.29	2.40
Milk protein, %	2.90	3.03	4	2.95	2.86	3.06
Milk protein, lb/day	1.98	2.29	16	1.98	1.92	2.23

Summary of six 56- to 80-day lactation trials
Summary of two 80- and 70-day lactation trials.
From metabolic trials of Poore et al. (1990) and Oliveira (1991).

Table 2. Increased profits from feeding steam-flaked sorghum compared to dry-rolled sorghum or steam-rolled corn to lactating dairy cows.

Assumptions:

1. Cost of flaking sorghum = $10/ton or .5 cents/lb; sorghum intake by cows = 20 lb/day @.5 cents/lb = 10 cents/day.
2. Uniform blend price of milk (Mar, 1992, in Dallas, TX) = $13.22 with 10 cents differential for protein (base = 3.1% and 8.1 cents differential for fat (base = 3.5%).

Processing benefits:

Steam-flaked vs dry-rolled sorghum: value of milk = $9.79 (SFS) vs $8.87 (DRS).
Increased profit = 92 cents/d/cow-10 cents (for flaking) = **82 cents**. For 100-cow herd (300 d) = **$24,600**

Steam-flaked sorghum vs steam-rolled corn: value of milk = $9.55 (SFS) vs $8.90 (SRC).
Increased profit = 65 cents/d/cow. For 100-cow herd (300d) = $19,500.

[1]Data from Table 1 values.
[2]Costs of SFS and SRC were equal. (U of A, Apr. 92)

APPENDIX B

SORGHUM USE IN ETHANOL PRODUCTION

Duane Kristensen
Chief Industries, Hastings, Nebraska, 402/463-6885

Statement:

Sorghum is comparable to corn in ethanol production.

Ethanol by-products:

Dried Distillers Grain (DDG) – The dollar value of sorghum DDG is comparable to corn DDG when end users are familiar with sorghum.

Notes:

APPENDIX C

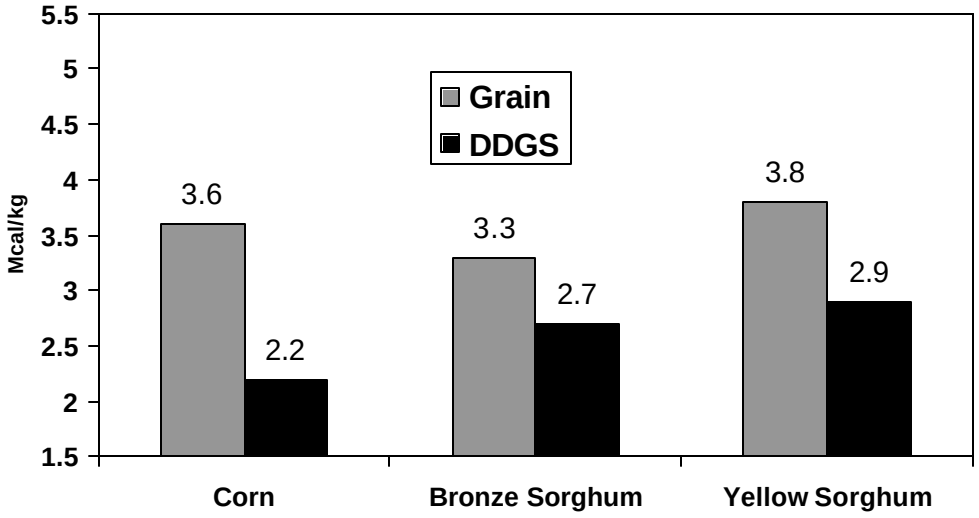
EFFECTS OF CORN AND SORGHUM GENOTYPE ON METABOLIZABLE ENERGY VALUE OF DRIED DISTILLERS GRAINS IN BROILER CHICKS

M.R. CABRERA AND J.D. HANCOCK
Department of Animal Sciences and Industry, Kansas State University, Manhattan, Kansas 785/532-6533

Co-products of the ethanol industry have received considerable attention as economical sources of protein and energy in swine and poultry diets for many years. Testimony to this early interest includes a flurry of research reports concerning use of distillers dried grains in diets for fattening pigs published in the Journal of Animal Science during the 1940's. Since that time, cheap cereal grains and inconsistent supply and quality of distillers grains has resulted in a general "thumb rule" that distillation by-products should be restricted to use in diets for gestating sows, finishing pigs , and laying hens with a maximum inclusion rate of only 5 to 10%. However, it seems likely that production of ethanol as a fuel will increase dramatically during the next 20 years, resulting in a marked increase in the amount of distillers dried grains available for use in the diets of swine and poultry. Thus, we conducted an experiment to determine the effects of the distillation process on (MEn) in corn and two sorghum genotypes. A total of 210 chicks (6 days old with an average initial BW of 104 g) was used in the 8-day experiment to determine the nitrogen-corrected metabolizable energy (MEn) value of corn, the two sorghum grain genotypes, and distillers dried grains with solubles (DDGS) made from those grains. Neither cereal grain source nor distillation treatment affected food intake of the chicks (P>12). Metabolizable energy values were 38% greater for the grains than for the DDGS (P<.001) and 24% greater for DDGS from the two sorghums than from the corn (P<.10).

Conclusion: These results indicate that a reduction in MEn occurred when cereal grains were fermented to DDGS, with a greater reduction for corn than for the sorghums.

Effects of distillation on MEn of corn, bronze sorghum, and yellow sorghum



APPENDIX D

EFFECTS OF CORN, SORGHUM GENOTYPE, AND PARTICLE SIZE ON MILLING CHARACTERISTICS AND PERFORMANCE IN LAYING HENS AND BROILER CHICKS

J.D. HANCOCK AND M.R. CABRERA

Department of Animal Sciences and Industry, Kansas State University, Manhattan, Kansas 785/532-6533

The effects of grain type (corn, hard endosperm sorghum, and soft endosperm sorghum) and particle size (geometric mean particle sizes of 1,000, 800, 600 and 400 µm) on milling characteristics and performance of laying hens and broiler chicks were investigated. The hens were fed from 20 to 55 wk of age in a curtain-sided, naturally ventilated cage house. Reducing particle size increased percentage egg production, and feed efficiency, especially for birds fed the sorghum grains. Considering energy required for milling, egg production, and feed efficiency, the optimum particle size for the three cereal grains was near 800 µm. In experiment 2, corn required more energy to grind and had lower production rates than the sorghums. As particle size was reduced, energy required to grind (kWh/t) increased and production rate (t/h) decreased. Growth rate, daily feed consumption, and gain/feed were not affected by treatment (P>.2).

Conclusion: Regardless of particle size, sorghum was equal to corn in feeding value in broiler chicks fed complex diets in crumbilized form.

APPENDIX E

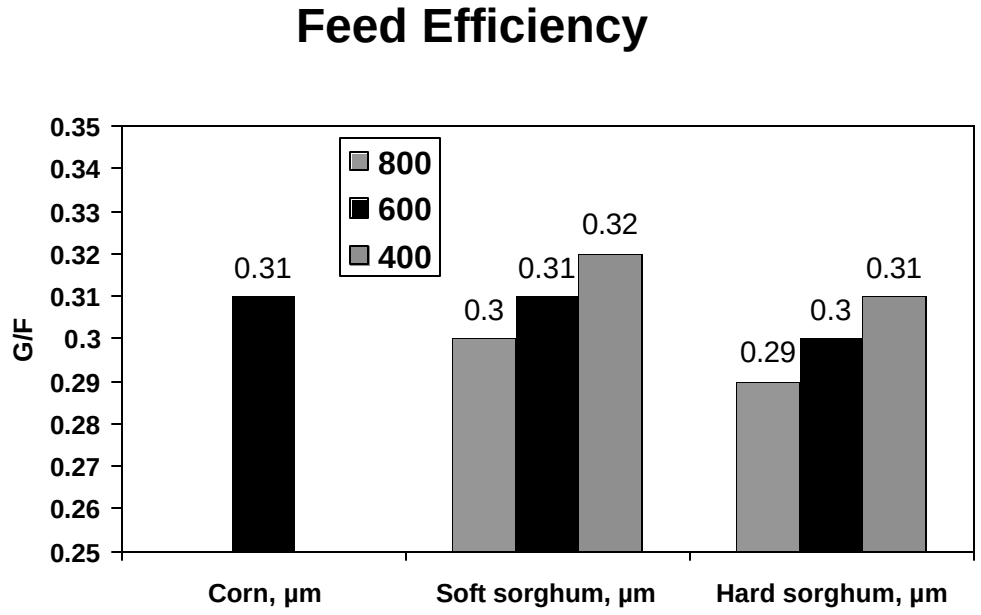
SORGHUM GENOTYPE AND PARTICLE SIZE AFFECT MILLING CHARACTERISTICS, GROWTH PERFORMANCE, AND NUTRIENT DIGESTIBILITY IN FINISHING PIGS

J.D. Hancock and M.R. Cabrera

Department of Animal Sciences and Industry, Kansas State University, Manhattan, Kansas 785/532-6533

Seventy barrows (avg initial BW of 54.3 kg) were used to determine the effects of sorghum genotype and particle size on milling characteristics, growth performance, and nutrient digestibility in finishing pigs. The pigs were fed a corn-soybean meal-based control diet with the corn milled to a mean particle size of 600 µm. Hard endosperm sorghum and soft endosperm sorghum were milled to mean particle sizes of 800, 600, and 400 µm, and substituted for the corn on a wt/wt basis, so that the overall treatment arrangement was a 2 x 3 factorial plus control. The sorghums required less energy to grind, had greater production rates, and produced less noise during milling than corn. Pigs fed diets with hard and soft endosperm sorghum had ADG, ADFI, and gain/feed that were similar to those of pigs fed corn (P>.10). Pigs fed hard sorghum grew faster (P<.04) but pigs fed soft sorghum were more efficient (P<.03). A linear increase in gain/feed was noted as mean particle size of the diets was reduced from 800 to 400 µm (P<.01). Reducing particle size from 800 to 400 µm decreased DM and N excretion in the feces by 14 and 28% respectively, for pigs fed the hard endosperm sorghum, and by 59 and 67%, respectively, for pigs fed soft endosperm sorghum (P<.001). Considering energy required for milling, production rate, noise produced, and nutrient digestibility, the optimum particle size for hard and soft sorghums will still likely be less than 600 µm.

Conclusion: These results indicate that hard and soft endosperm sorghum milled at the same rate as corn are comparitive in nutritional value.



APPENDIX F

UTILIZATION OF STEAM-FLAKED GRAIN SORGHUM AND CORN WITH AND WITHOUT ADDED FAT BY GROWING/FINISHING STEERS

R.B. Blackwood and Dr. C.R. Richardson

Texas Tech University

806/742-2825

SUMMARY OF TWO STUDIES

In two separate trials, Brangus and Hereford steers (601 + 6.8 lb; n=112) and Angus and Angus-Hereford steers (740 ±3.5 lb; n=112) were randomly assigned to 16 pens in each trial (seven per pen) and fed one of four dietary treatments in a completely randomized 2X2 factorial experimental design. Diets contained 10% roughage, 13% crude protein and adequate levels of all other nutrients. Major energy sources in the diets consisted of grain sorghum without added fat, corn without added fat, grain sorghum + 2% fat and corn +2% fat. Steers were slaughtered after reaching market weight and finish. Carcasses of all steers were evaluated 24 h postmortem for USDA quality grades; hot carcass weights; marbling score; fat thickness; ribeye area; kidney, pelvic and heart fat; maturity scores; lean color; lean firmness; heat rings and lean texture. Data collected from these two trials were combined for statistical purposes.

Cumulative data show no differences in feed intake, ADG, feed required per pound of gain or energy required per lb. of gain (P>.05) across all treatments. Diet had no effect on any of the measured carcass characteristics except for fat thickness, ribeye area, percent kidney, pelvic and heart fat and hot carcass weight (P>.05).

These data show that steam-flaked grain sorghum without fat has equal value to steam-flaked corn without fat when fed to growing/finishing steers. Carcasses produced by steers fed corn without fat and corn + fat diets had more external fat as indicated by increased fat thickness and higher KPH fat percent (P<.05).

Performance of Growing/Finishing Steers

	GS	SEM	CN	SEM	GS+F	SEM	CN+F	SEM
DMI (lb/d/hd)	15.9	.41	16.3	.42	16.6	.39	17.8	.22
ADG (lb/d/hd)	2.5	.09	2.6	.05	2.5	.06	2.7	.04
DMI (lb gain)	6.6	.15	6.3	.07	6.5	.09	6.2	.12
MCAL/lb gain	8.4	.18	8.4	.08	8.5	.15	8.3	.21

Conclusion: These data show that steam-flaked grain sorghum can be used instead of steam-flaked corn when fed without additional fat in high concentrate diets for growing/finishing steers without suffering any adverse effect on gain, feed efficiency or quality grade. Fat added to any of these diets did not give the boost in performance that has been reported.

APPENDIX G

From: "david capek" <dc60500@navix.net>
To: <norma@sorghumgrowers.com>
Subject: Re: Conservation w Tim Snyder on 10/20/00
Date: Monday, November 06, 2000 1:17 PM

Tim: Steve Gill and I had a long friendly chat which produced a phone call from Marty Mitchell from KC Commidity Office and another long friendly chat regarding the LDP ratio between corn and milo. The only politician that returned a phone call was from Senator Kerry's office, Gene Glock. The effort to increase loan rate for milo should include arguments about milo's crop insurance actuarial soundness as compared to the actuarial unsoundness of corn in the milo belt. Unfortunately, growers up north in Nebraska are at a disadvantage due to our distance from the Gulf. If things stay the same, I'll plant corn next year. Thanks for you help. David Capek Milligan NE

From: "david capek" <dc60500@navix.net>
To: "Norma Ritz Johnson" <norma@sorghumgrowers.com>
Subject: Re: Grain Sorghum Testimony
Date: Wednesday, March 14, 2001 6:52 PM

You have my permission to use the e-mail. My croppping mix will change from 100 dryland milo to 2/3 no-till corn and 1/3 no-till milo. My figures indicate that milo is as profitable as corn until the loan rate and LDP tip the balance to corn. Corn requires more fertilizer, more seed cost, more drying cost (?) and higher equipment cost. Additionally, corn's higher yields come with higher risks and resultant higher loses; thus, a heavier reliance on crop insurance to pick up the loses. and the taxpayer is paying for the crop insurance. thanks
dave

Appendix H: Comparison Summary Report -- 2002-2008 Average

Not based on the actual CBO baseline but instead on an approximate of the CBO baseline

	with NGSP Proposal	CBO Baseline
Government Cost		
Direct Payments (million dollars)	$11,752.6	$5,408.6
Total CCC Net Outlays (million dollars)	$14,906.3	$8,562.2
Effect on other commodities		
Net Farm Income (billion dollars)	$61.2	$54.5
Direct Payments (million dollars)		
Corn	$4,102.5	$1,852.5
Grain Sorghum	$440.8	$204.8
Barley	$146.9	$86.6
Oats	$8.7	$6.0
Wheat	$3,552.8	$1,052.5
Soybeans	$525.7	$1,343.1
Cotton	$1,403.3	$472.0
Rice	$1,356.4	$347.1
Net Returns (excl. Govt Payments)		
Corn	$164.6	$187.9
Grain Sorghum	$58.4	$68.7
Barley	$66.0	$77.0
Oats	$3.5	$10.0
Wheat	$56.9	$73.4
Soybeans	$149.4	$129.8
Cotton	$110.0	$118.1
Rice	$85.8	$12.1
Government Payments[1]		
Corn	$50.9	$22.9
Grain Sorghum	$38.2	$15.3
Barley	$15.2	$8.1
Oats	$1.6	$1.1
Wheat	$51.2	$13.6
Soybeans	$7.4	$18.7
Cotton	$96.6	$32.7
Rice	$377.1	$85.4
Returns Above Variable Costs		
Corn	$215.4	$210.8
Grain Sorghum	$96.6	$84.0
Barley	$81.2	$85.1
Oats	$5.1	$11.2
Wheat	$108.1	$87.0
Soybeans	$156.8	$148.5
Cotton	$206.7	$150.7
Rice	$291.3	$97.4
Production of Livestock		
Beef Cow Herd	35,944	35,821
Sows Farrowing	6,541	6,502
Dairy Cow Herd	24,063	23,965
Broiler Production	4,928	4,887
Turkey Production	1,698	1,634
Egg Production	9,864	9,766
Prices of Livestock		
Fed Steer Price	$70.29	$70.3
Barrow and Gilts Price	$42.30	$42.2
All Milk Price	$12.65	$12.6
Retail Price of Whole Fryers	$90.42	$89.8
Turkeys Farm Price	$39.84	$39.8
Eggs Farm Price	$62.72	$62.7
WTO Score		
Annual Commitment		
Amber Box	$14,452.6	$9,900.6
Green Box	$8,687.9	$6,895.9

Appendix I: Summary Report
NGSP Proposal using CBO

	2002-2008 Average	2000	2001	2002	2003	2004	2005	2006	2007
Effect on other commodities									
Net Farm Income (billion dollars)	$61.2	$49.8	$48.0	$58.8	$57.5	$56.4	$58.6	$60.9	$65.9
Direct Payments (million dollars)									
Corn	$4,103	$5,284	$1,909	$6,797	$6,441	$5,142	$3,568	$2,681	$2,681
Grain Sorghum	$441	$366	$211	$577	$570	$542	$466	$329	$296
Barley	$147	$195	$89	$209	$195	$163	$125	$125	$125
Oats	$9	$20	$6	$9	$9	$9	$9	$9	$9
Wheat	$3,553	$2,045	$1,350	$4,504	$4,459	$4,324	$3,678	$2,942	$2,360
Soybeans	$526	$2,290	$3,047	$1,850	$1,150	$915	$564	$0	$0
Cotton	$1,403	$755	$570	$1,530	$1,330	$1,416	$1,377	$1,414	$1,479
Rice	$1,356	$534	$438	$1,199	$1,424	$1,406	$1,375	$1,305	$1,273
Net Returns (excl. Govt Payments)									
Corn	$165	$98	$149	$140	$142	$148	$161	$177	$194
Grain Sorghum	$58	$23	$53	$48	$49	$52	$57	$64	$71
Barley	$66	$41	$63	$57	$57	$60	$65	$71	$78
Oats	$3	-$3	$4	$1	$0	$1	$3	$5	$8
Wheat	$57	$53	$54	$47	$48	$50	$57	$62	$67
Soybeans	$149	$103	$103	$131	$138	$140	$142	$156	$171
Cotton	$110	$128	$123	$118	$120	$115	$112	$106	$97
Rice	-$86	$17	$7	-$13	-$88	-$89	-$90	-$80	-$82
Government Payments									
Corn	$51	$69	$24	$85	$80	$64	$44	$33	$33
Grain Sorghum	$38	$33	$16	$54	$53	$49	$41	$26	$22
Barley	$15	$26	$8	$26	$23	$18	$12	$12	$12
Oats	$2	$7	$1	$2	$2	$2	$2	$2	$2
Wheat	$51	$31	$19	$67	$66	$64	$53	$41	$32
Soybeans	$7	$32	$41	$27	$16	$13	$8	$0	$0
Cotton	$97	$53	$39	$104	$93	$98	$95	$97	$101
Rice	$377	$139	$112	$330	$397	$392	$383	$362	$352
Returns Above Variable Costs									
Corn	$215	$168	$173	$225	$223	$212	$205	$210	$227
Grain Sorghum	$97	$56	$69	$102	$102	$101	$98	$89	$93
Barley	$81	$67	$71	$83	$80	$78	$76	$83	$89
Oats	$5	$5	$5	$2	$2	$3	$4	$7	$10
Wheat	$108	$83	$73	$114	$114	$114	$110	$103	$100
Soybeans	$157	$135	$144	$158	$155	$153	$150	$156	$171
Cotton	$207	$181	$162	$221	$213	$213	$207	$202	$198
Rice	$291	$156	$119	$317	$310	$303	$293	$282	$270
Production of Livestock									
Beef Cow Herd	35,944	33,382	34,573	35,768	36,497	36,539	36,153	35,753	35,521
Sows Farrowing	6,541	12,274	6,446	6,612	6,641	6,611	6,544	6,497	6,458
Dairy Cow Herd	24,063	9,206	23,752	23,730	24,102	24,265	24,313	24,137	24,005
Broiler Production	4,928	30,870	4,548	4,948	5,079	5,046	4,898	4,861	4,831
Turkey Production	1,698	5,267	1,781	1,722	1,663	1,646	1,703	1,727	1,725
Egg Production	9,864	6,874	9,954	9,667	9,709	9,811	9,933	9,968	9,980
Prices of Livestock									
Fed Steer Price	$70.29	$71.35	$74.10	$72.61	$69.83	$67.29	$68.61	$69.98	$71.43
Barrow and Gilts Price	$42.30	$44.51	$43.58	$40.20	$38.80	$39.53	$44.53	$45.17	$43.98
All Milk Price	$12.65	$12.90	$12.63	$12.42	$12.47	$12.54	$12.74	$12.80	$12.78
Retail Price of Whole Fryers	$90.42	$84.80	$83.23	$85.02	$86.54	$88.06	$90.25	$92.05	$94.43
Turkeys Farm Price	$39.84	$37.62	$38.68	$37.66	$40.62	$38.57	$41.40	$39.13	$41.95
Eggs Farm Price	$62.72	$62.25	$64.72	$63.83	$64.65	$58.54	$61.17	$59.95	$63.80

Appendix J: CCC Net Outlays by Commodity & Function

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Feed Grains									
Corn	5,283.9	1,908.9	6,796.9	6,440.9	5,142.4	3,567.7	2,680.8	2,680.8	2,680.8
Grain sorghum	366.0	211.0	576.8	570.2	542.1	466.5	328.6	296.4	296.4
Barley	194.9	89.2	209.4	195.5	163.4	125.3	125.3	125.3	125.3
Oats	19.7	6.2	8.7	8.7	8.7	8.7	8.7	8.7	8.7
Total feed grains	5,864.5	2,215.3	7,591.7	7,215.3	5,856.6	4,168.2	3,143.4	3,111.1	3,111.1
Wheat and products	2,044.6	1,349.9	4,504.2	4,459.3	4,324.2	3,678.1	2,942.0	2,360.4	1,982.1
Rice	534.4	438.4	1,198.9	1,423.8	1,405.9	1,374.9	1,305.1	1,272.6	1,245.2
Upland cotton	755.2	569.8	1,530.2	1,330.4	1,416.3	1,376.8	1,413.8	1,479.0	1,569.4
Tobacco	301.0	25.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Dairy	685.0	149.0	167.0	111.0	136.0	152.0	122.0	118.0	125.0
Soybeans	2,290.2	3,047.2	1,850.1	1,150.1	914.9	563.6	0.0	0.0	0.0
Peanuts	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Sugar	141.0	90.0	34.0	44.0	113.0	126.5	122.5	116.7	92.4
Honey	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Wool and mohair	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operating expense	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0
Interest expenditure	626.0	727.0	145.3	162.3	178.6	201.9	226.0	250.7	276.3
Export programs	329.0	691.0	365.0	100.0	100.0	100.0	100.0	100.0	100.0
1988-2000 Disaster/tree/livestock assistance	1,549.0	26.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
Conservation Reserve Program	1,551.0	1,657.0	1,836.4	1,802.8	1,854.5	1,830.2	1,833.4	1,865.2	1,860.8
Other conservation programs	382.0	355.0	252.5	232.3	234.8	247.0	236.0	249.0	255.0
Other	1,459.0	1,004.0	129.3	152.8	175.2	207.4	240.7	274.9	310.1
Specialty Crops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total:	18,628.9	12,461.6	19,891.5	18,471.1	16,996.8	14,313.5	11,971.8	11,484.6	11,214.5

Appendix K: Total Amount Received (per unit of production)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	
LDP's										
Corn	0.29	0.00	0.11	0.10	0.04	0.00	0.00	0.00	0.00	
Grain sorghum	0.22	0.00	0.28	0.27	0.21	0.12	0.02	0.00	0.00	
Barley	0.26	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	
Oats	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Wheat	0.31	0.12	0.48	0.45	0.38	0.21	0.07	0.00	0.00	
Soybeans	0.83	1.04	0.36	0.19	0.14	0.08	0.00	0.00	0.00	
Upland cotton	0.02	0.01	0.04	0.03	0.04	0.03	0.04	0.04	0.04	
Rice	0.53	0.43	1.03	2.10	2.00	1.84	1.50	1.33	1.19	
CC payments										
Corn	0	0	0.25	0.23	0.17	0.07	0	0	0	
Grain sorghum	0	0	0.18	0.18	0.18	0.14	0.03	0	0	
Barley	0	0	0.18	0.16	0.1	0	0	0	0	
Oats	0	0	0	0	0	0	0	0	0	
Wheat	0	0	0.67	0.67	0.67	0.58	0.44	0.29	0.16	
Soybeans	0	0	0.31	0.22	0.17	0.11	0	0	0	
Upland cotton	0	0	0.05	0.04	0.04	0.04	0.04	0.04	0.05	
Rice	0	0	2.33	2.33	2.33	2.33	2.33	2.33	2.33	
AMTA Payments										
Corn	0.23	0.18	0.25	0.25	0.25	0.25	0.24	0.24	0.24	
Grain sorghum	0.56	0.40	0.51	0.50	0.50	0.50	0.49	0.49	0.48	
Barley	0.34	0.29	0.35	0.35	0.35	0.35	0.34	0.34	0.33	
Oats	0.06	0.04	0.06	0.06	0.06	0.06	0.06	0.06	0.06	
Wheat	0.61	0.48	0.63	0.62	0.62	0.61	0.61	0.60	0.60	
Soybeans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Upland cotton	0.07	0.05	0.07	0.08	0.07	0.07	0.07	0.07	0.07	
Rice	2.30	1.70	2.37	2.37	2.36	2.35	2.35	2.34	2.33	
Market Price										
Corn	1.8	2.18	2.07	2.09	2.15	2.25	2.36	2.49	2.62	
Grain sorghum	1.65	1.96	1.86	1.88	1.93	2.02	2.13	2.24	2.36	
Barley	1.98	2.4	2.28	2.3	2.36	2.47	2.6	2.74	2.88	
Oats	1.19	1.44	1.37	1.38	1.42	1.48	1.56	1.65	1.73	
Wheat	2.57	2.76	2.53	2.56	2.63	2.8	2.94	3.09	3.22	
Soybeans	4.71	4.5	5.18	5.35	5.4	5.46	5.81	6.21	6.33	
Upland cotton	0.59	0.6	0.59	0.6	0.6	0.6	0.6	0.6	0.59	
Rice	5.98	6.08	5.81	4.73	4.83	4.99	5.34	5.51	5.65	
Total Amount										**Average**
Corn	2.32	2.36	2.68	2.67	2.61	2.57	2.60	2.73	2.86	**2.67**
Grain sorghum	2.43	2.36	2.83	2.83	2.82	2.78	2.67	2.73	2.84	**2.78**
Barley	2.58	2.69	2.85	2.83	2.81	2.82	2.94	3.08	3.21	**2.94**
Oats	1.34	1.48	1.43	1.44	1.48	1.54	1.62	1.71	1.79	**1.57**
Wheat	3.49	3.36	4.31	4.30	4.30	4.20	4.06	3.98	3.98	**4.16**
Soybeans	5.54	5.54	5.85	5.76	5.71	5.65	5.81	6.21	6.33	**5.90**
Upland cotton	0.68	0.66	0.75	0.75	0.75	0.74	0.75	0.75	0.75	**0.75**
Rice	8.81	8.21	11.54	11.53	11.52	11.51	11.52	11.51	11.50	**11.52**

Appendix L: Selected Direct Payments by Commodity

	2000	2001	2002	2003	2004	2005	2006	2007	2008
LDP's									
Corn	2,912.8	0.0	1,219.5	1,042.0	418.9	0.0	0.0	0.0	0.0
Grain sorghum	103.9	0.0	163.6	155.8	126.4	74.2	10.0	0.0	0.0
Barley	84.1	0.0	15.0	8.1	0.0	0.0	0.0	0.0	0.0
Oats	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wheat	697.5	265.3	1,153.8	1,093.0	941.8	526.5	176.1	0.0	0.0
Soybeans	2,290.2	3,047.2	982.3	525.9	409.0	234.5	0.0	0.0	0.0
Upland cotton	158.5	89.5	393.5	297.5	338.5	319.0	336.7	368.1	411.7
Rice	99.9	88.6	212.3	435.8	416.5	384.1	312.9	279.0	250.2
Total:	6,358.9	3,490.6	4,140.0	3,558.1	2,651.2	1,538.2	835.6	647.1	661.9
AMTA									
Corn	2,371.1	1,908.9	2,680.8	2,680.8	2,680.8	2,680.8	2,680.8	2,680.8	2,680.8
Grain sorghum	262.1	211.0	296.4	296.4	296.4	296.4	296.4	296.4	296.4
Barley	110.8	89.2	125.3	125.3	125.3	125.3	125.3	125.3	125.3
Oats	7.7	6.2	8.7	8.7	8.7	8.7	8.7	8.7	8.7
Wheat	1,347.1	1,084.5	1,523.1	1,523.1	1,523.1	1,523.1	1,523.1	1,523.1	1,523.1
Soybeans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Upland cotton	596.6	480.3	674.5	674.5	674.5	674.5	674.5	674.5	674.5
Rice	434.5	349.8	491.3	491.3	491.3	491.3	491.3	491.3	491.3
Total:	5,130.0	4,130.0	5,800.0	5,800.0	5,800.0	5,800.0	5,800.0	5,800.0	5,800.0
Counter Cyclical									
Corn	0.0	0.0	2896.6	2718.1	2042.7	887.0	0.0	0.0	0.0
Grain sorghum	0.0	0.0	116.8	118.1	119.3	95.9	22.3	0.0	0.0
Barley	0.0	0.0	69.1	62.1	38.1	0.0	0.0	0.0	0.0
Oats	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wheat	0.0	0.0	1827.3	1843.3	1859.3	1628.5	1242.9	837.3	459.1
Soybeans	0.0	0.0	867.7	624.2	505.8	329.1	0.0	0.0	0.0
Upland cotton	0.0	0.0	462.2	358.4	403.2	383.3	402.6	436.4	483.1
Rice	0.0	0.0	495.3	496.7	498.1	499.5	500.9	502.4	503.8
Total:	0.0	0.0	6,735.0	6,220.9	5,466.6	3,823.2	2,168.7	1,776.0	1,446.0
Total Direct Costs	11,488.9	7,620.6	16,675.0	15,578.9	13,917.8	11,161.5	8,804.3	8,223.1	7,907.9